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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/657,236

09/09/2003

Toru Kawasaki

8001-1171

8844

466

7590

01/05/2006

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EXAMINER

HU, SHOUXIANG

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/657,236		KAWASAKI, TORU	
	Examiner		Art Unit	
	Shouxiang Hu		2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-40 is/are pending in the application.
- 4a) Of the above claim(s) 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20051020</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claim 40 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being unreadable on the elected species of Figs. 6-16.

Accordingly, claims 30-40 are pending in this application; and claims 30-39 remain active in this office action.

Claim Objections

Claims 36 and 39 are objected to because of the following informalities and/or defects:

Claim 36 recites the subject matters of the plurality of shift register electrodes functions as a plurality of vertical and horizontal shift register electrodes", but fails to clarify that a single shift register electrode can only function as one of the vertical and horizontal shift register electrodes, not both.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30-39, as being best understood in view of the claim objections above and as being supported by the elected species, are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (applicant's admitted prior art) in view of Hatano (Hatano et al., US 6,143,585)

AAPA discloses a solid state image sensor (Figs. 1-5 in the instant disclosure) comprising: a semiconductor substrate (801) having an imaging area (see Fig. 4A and 4B) and a peripheral area (see Fig. 4C) that naturally surrounds the imaging area; photoelectric conversion elements (see Fig. 4A); a charge transfer section (See Fig. 4B) having a plurality of elongated shift register electrodes (828 and/or 830) that are further extended and function as peripheral electrodes over the peripheral area, and these electrodes are formed from a single conductive layer; a first insulating layer (806 in Fig. 4B) in the first gaps between and over the neighboring shift register electrodes therein; a second insulating layer (806 in Fig. 4C) in the second gaps between and over the neighboring peripheral electrodes therein; and, a light-shielding metal layer (807, 808) .

Although AAPA does not expressly disclose that the second insulating layer can be thicker than the first insulating layer, one of ordinary skill in the art would readily recognize that such thicker second insulating layer can be desirably formed to accommodate the higher electrical insulation requirement in the peripheral area where applied voltage is higher than that of the imaging area, as readily evidenced in the prior art such as Hatano (see the first insulting layer 411 in the cell area and the second insulating layer 406a and 411 in the peripheral area in Fig. 5D; also see cols. 1 and 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device of AAPA with the second insulating layer in the peripheral area being thicker than the first insulating layer in the imaging area, per the teachings of Hatano, so that an imager device with improved electrical insulation in the peripheral area would be obtained.

Regarding claims 33 and 34, it is noted that the reflowable BPSG is common used in the art for forming an insulating layer.

Response to Arguments

Applicant's arguments with respect to the above rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2811

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH
December 29, 2005



SHOUXIANG HU
PRIMARY EXAMINER